

REGULATORY OBSERVATION	
REGULATOR TO COMPLETE	
RO unique no.:	RO-ABWR-0064
Date sent:	23rd October 2015
Acknowledgement required by:	13th November 2015
Agreement of Resolution Plan Required by:	15th November 2015
Resolution of Regulatory Observation required by:	31st December 2015
TRIM Ref.:	2015/390811
Related RQ / RO No. and TRIM Ref. (if any):	RQ-ABWR-0506, RO-ABWR-0016, RO-ABWR-0017, RO-ABWR-0036, RO-ABWR-0047
Observation title:	Design approach to identification and provision of both permanent and temporary features necessary for the adequate control of radioactive contamination across the full lifetime of UKABWR
Technical area(s) 10. Radiation Protection & (Level 3 PSA)	Related technical area(s) 11. Mechanical Engineering 13. Human Factors 15. Radwaste & Decommissioning 16. Conventional Safety & Decommissioning 19. Fire Safety 21. Generic Environmental Permitting
Regulatory Observation	
Summary	
<p>This Radiation Protection regulatory observation is cross cutting and is being raised to ensure the design of the UKABWR includes appropriate arrangements for both permanent and temporary features necessary for the adequate control of contamination are maintained through all phases and stages of operation of the UKABWR.</p>	
Assessment Observation	
<p>During interactions to date it has not been possible to identify clearly the approach that Hitachi-GE is taking to control radioactive contamination. ONR expects that UKABWR is designed such that permanent and temporary features required to manage and prevent the spread of radioactive contamination, from areas of high designation to those of lower designation are fully considered. RQ-ABWR-0506 was raised to gain understanding of Hitachi-GEs approach and design for the management of radioactive contamination within the UKABWR. The response to the RQ was reasonably detailed and provided high level statements on the design philosophy used, certain examples and general statements on compliance with UK expectations. It did not however address some level of detail with regard to specifications required for surface preparation and examples of locations of features to which contamination control is applied.</p> <p>This RO is raised to clarify ONRs regulatory expectation to ensure HGNE close the gap between the current RQ response and this expectation.</p> <p>As described in ONR Technical Assessment Guide NS-TAST-GD-038 “Radiological Protection” Paragraph 5.3 “The SAPs also highlight guidance from the ACoP for IRR99 regarding a hierarchy of control measures for restricting exposures of people to radiation. It is essential for radiation sources to be controlled so far as reasonably practicable before placing controls on individuals. Thus priority should be given to engineered means, including passive design features and engineered safety systems, before resorting to systems of work.” The Hierarchy of control measures is established in Regulation 8(2) of the IRR99 and repeated in SAP RP.7.</p>	

Additionally SAP RP.4 - Contaminated areas states: "effective means for protecting persons entering and working in contaminated areas should be provided. Facilities should provide for monitoring and controlling any spread of airborne activity and contamination within and beyond each area. Also, levels of contamination should be kept ALARP, taking into account the nature of the activities being undertaken"

Regulation 18(7) of the IRRs 99 places additional requirements on provision of washing and change facilities already detailed in RQ-ABWR-0506 and with industry guidance/relevant good practice provided in the "Change-room Design, Operation and Maintenance-Nuclear Industry Code of Practice" Issue 1 July 2006 (<http://www.nuclearinst.com/write/MediaUploads/SDF%20documents/changerooms.pdf>)

Other Related ROs which may be used to help in addressing the response to this RO include:

RO-ABWR-0016 Mechanical Engineering Design Process Arrangements

RO-ABWR-0017 Nuclear Ventilation Codes and Standards

RO-ABWR-0036 Demonstration that the approach taken to Radioactive waste management reduces risk SFAIRP

RO-ABWR-0047 Mechanical Engineering – Wet lifting Beams – Materials of Construction

The objective of this RO is to:

- a) State ONR's expectations related to the design for contamination control and management
- b) Request Hitachi-GE shows how it will implement a design approach that meets ONR expectations for the design of the UKABWR related to contamination control

Regulatory Observation Actions

RO-ABWR-0064.A1

Hitachi-Ge to provide a resolution plan detailing the process to be followed and how it intends to comply with the remaining actions.

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A2

Identify and presents the locations, nature (Solid, Liquid or Gas) and extent (Volume and Activity) of potential radioactive contamination

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A3

Explain the design philosophy in relation to the control and containment of radioactive material. This should include all aspects of contamination control through fixed features, including ventilation and barriers, as well as through the provision of movable features.

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A4

Identify and present the relevant standards from which specifications for materials, surfaces and surface-finishes are identified in relation to minimising contamination adherence, and to aid with decontamination

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A5

Following the identification of the specifications which define the materials, surfaces and surface-finishes used in areas with the potential to become radioactively contaminated provide examples of how they are applied within the UK ABWR

design.

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A6

Identify the features needed by the design to facilitate decontamination techniques prior to intrusive maintenance or following an unplanned leak from primary containment (Note: Primary Containment is used in general containment usage and not just primary reactor containment)

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A7

Identify how Hitachi-GE intends to manage HVAC/LEV arrangements within the relevant buildings of the GDA design to ensure a balanced and controlled cascade ventilation system is maintained.

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

RO-ABWR-0064.A8

Identify the nature and location of monitoring (Airborne, Radiation and Surface Contamination) equipment required to control and minimise contamination spread within the UK ABWR, providing examples.

Resolution required by 'to be determined by Hitachi-GE Resolution Plan'

REQUESTING PARTY TO COMPLETE

Actual Acknowledgement date:

RP stated Resolution Plan agreement date: